

SOME VARIETIES OF WESTERN OLIVELLAS.

BY T. S. OLDROYD.

Conrad described *Olivella pedroana* from a fossil found at San Pedro, in 1854, but the figure is more like what Carpenter described as *O. intorta*; this is plentiful in the Upper San Pedro, and not at all like *O. boetica* Cpr., described by him in the report of the British Association for Advancement of Science, published in London in 1864. The following is Carpenter's description, not a very full one, *O. boetica*, narrow, dull, thin. This has erroneously been called *anzora*, *tergina*, *petiolata* and *rufifasciata*. Habitat between San Diego and San Pedro, Santa Barbara, Monterey, Oregon, the region on each side of the Columbia River, Puget Sound and Vancouver Island. Type locality not given. Sowerby in *Thesaurus Conchyliorum*, Vol. 4, gives the type locality as British Columbia. They are quite plentiful at Departure Bay, Vancouver Island, but most of them are a reddish brown in color; they are also found in Puget Sound and all along the coast of British Columbia, and Alaska up in the Bering Sea. All of the northern *O. boetica* are much the same in shape but in the farther north they grow larger and more beautifully striped, a creamy white with zigzag markings of brown, these have also been found in Puget Sound, and it would be more practicable to call the northern specimens all the same. The *O. boetica* in the region between San Pedro and San Diego vary from those in the north, both in color and shape; in fact, though it is not generally known, there are two distinct varieties in this region, different in size and shape, the smaller of the two which I will describe is also found in lower California, living, and is very plentiful in the upper Pleistocene at San Pedro.

Olivella biplicata Sowerby was described in the Tankerville Catalogue in 1825. The type locality is Monterey; it is also found further south in San Luis Obispo County. Although they vary somewhat in shape of spire yet they are easily distinguished, being thicker, broader, and with a much larger callus spot than the San Pedro variety. Those found in the

Strait of Juan de Fuca and British Columbia are different, as are those found in Lower California. The West Coast Olivellas are very variable, they differ on some of the Channel Islands, and on some of the islands of the north. I have picked a type from the most prevalent forms along the coast. As far as the recent shells are concerned, we could get along without this division, but they all occur as fossils at San Pedro in various horizons and therefore I suggest these varietal names as a help and convenience in working over the fossils. There has been a color variety described by Mr. Vanatta, but I have used only the form and general outline of the shells, as the fossils have all lost their color.

OLIVELLA BOETICA DIEGENSIS, n. var. Plate V, fig. 2.

This differs from the typical shells of British Columbia, in the color being a light drab, sometimes mottled; not as oval in outline, spire longer and running more sharply to a point. Length, 19; breadth, 8 mm.

Type in the Oldroyd collection, Stanford University. Range San Diego to San Pedro; living. Pleistocene in upper San Pedro.

OLIVELLA BOETICA MEXICANA, n. var. Plate I, figs. 3.

This differs from var. *pedroana* in being smaller, more slender, spire not running quite as sharply to a point. Length, 10; breadth, 4 mm.

Type is in the Oldroyd collection, Stanford University. Type locality, Scammon's Lagoon, Lower California. Pleistocene, the upper San Pedro. Living at San Pedro. Collected by Mr. Henry Hemphill.

OLIVELLA BIPPLICATA FUCANA, n. var. Plate V, fig. 4.

Shell broader across the middle and lower part of the aperture than var. *angelena*; spire running more sharply to a point from the middle of the shell. Color more uniform, being a light drab. Length, 28; breadth, 14 mm.

Type in Oldroyd collection, Stanford University. Living. Type locality, Straits of Fuca, near Cape Flattery. Pliocene at San Pedro.

OLIVELLA BIPPLICATA PARVA, n. var. Plate V, fig. 7.

This var. is nearest *angelena*, but much smaller, a little broader in proportion; outer lip more curved, shell more highly colored and variable in color; found in the upper Pleistocene at San Pedro. Length, 14; breadth, 8 mm.

Type in the Oldroyd collection, Stanford University. Type locality, Point Abreojos, Lower California. Collected by Mr. Henry Hemphill.

EXPLANATION OF PLATE V.

(All figures natural size.)

- Fig. 1. *Olivella boetica* Carpenter, Alaska.
 Fig. 1a. *Olivella boetica* Carpenter, Vancouver Island, typical.
 Fig. 2. *Olivella boetica diegensis*, n. var.
 Fig. 3. *Olivella boetica mexicana*, n. var.
 Fig. 4. *Olivella biplicata fucana*, n. var.
 Fig. 5. *Olivella biplicata* typical. Monterey.
 Fig. 6. *Olivella biplicata angelina* T. S. Oldroyd.
 Fig. 7. *Olivella biplicata parva*, n. var.
 Fig. 8. *Tornatina tumida*, n. sp.
 Fig. 9. *Conus californicus fossilis*, n. var.
 Fig. 10. *Vermetus nodosus*, n. sp.
 Fig. 11. *Tegula hemphilli*, n. sp.
 Fig. 12. *Clathrodrilla diegensis*, n. sp.
 Fig. 13. *Epitonium clarki*, n. sp.

COLLECTING SHELLS ON THE EAST COAST OF FLORIDA IN THE
 WINTERS 1891 AND 1892.

BY OLOF O. NYLANDER.

Collections made at Jacksonville, Pablo Beach, Indian River and Lake Worth Inlet, were partly named and compared with specimens in the museums at New York City, New Haven, Conn., Boston and Cambridge, Mass., in the summers of 1892-93. A number of the species however were not named until this winter by Mr. T. Van Hyning of the Florida State Museum